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February 22, 2001

Mr. Roger Baker
Principal Planner
CITY OF BURBANK
275 East Olive Avenue
Burbank, California 91502

Clayton Project No. .80-98191.00

Subject: Status Report of Vapor Extraction System Operation - Lockheed-Martin
B-1 Site – October 2000 – January 2001

Dear Mr. Baker:

The following status report has been prepared for the Vapor Extraction System (VES) operation at Lockheed-Martin B-1 Site for the period between October 2000 and January 2001. It includes the following items:

- Background
- Clayton Field Activities
- Results of Laboratory Analysis
- Health Risk Assessment
- Conclusions

BACKGROUND

Alton Geoscience conducted a "Phase I" and "Phase II" of VES effluent sampling and health risk assessment for the Lockheed-Martin B-1 facility. Phase I consisted of twelve weekly health risk reports based on samples collected between September 2, 1997 and February 9, 1998. Phase II included twelve bi-weekly health risk assessments based on samples collected between February 16, 1998 and September 9, 1998. Phase III consisted of monthly sampling between October and December 1998.

Phase IV of the VES effluent sampling consists of VES effluent sample acquisition, laboratory analyses, and health risk assessments to be performed once per quarter for the remainder of the project. The first and second quarterly health risk assessments were provided by Alton in reports dated January 18, 1999 and May 24, 1999, respectively.

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Clayton conducted the third quarter sampling and risk assessment, then provided the results a report dated November 1, 1999. Five additional reports were submitted by Clayton. These reports were dated:

- November 23, 1999, which addressed the temporary shutdown of the system on October 14, 1999 for rebound testing;
 - March 13, 2000, for the period following restart of the system;
 - May 16, 2000 for the period through March 2000;
 - March, July 12, 2000 for the period through June 2000, and
 - November 17, 2000, for the period through September 2000.

Since October 2000, the VES system was shut down for two periods. First, between November 15, 2000 and December 11, 2000, to allow the relocation of a fiber optic system. Then once again, between December 29, 2000 and January 2, 2001, due to a cooling tower motor failure. Consequently, quarterly monitoring, originally planed in December 2000, was delayed due to the system shutdown.

CLAYTON FIELD ACTIVITIES

On January 12, 2001, personnel from Clayton Group Services (Clayton) met with Earth Tech personnel to conduct sampling of air emissions at the Lockheed-Martin B-1 Site VES. Clayton and Earth Tech personnel each collected an exhaust sample using an evacuated Summa canister, connected via a disposable Teflon® tube to the VES unit's sampling port.

During the sampling period, the exhaust flow rate (of 1,500 scfm) and VOC monitoring reading (of 1.61 ppm) was recorded. This VOC reading was within acceptable operating conditions for the VES. The 15 minute and 24 hour average VOC emissions rates indicated at the time were 1.5956 and 1.4645 lbs/day, respectively.

The sample collected by Clayton was delivered to Air Toxics LTD in Folsom, California for analysis by gas-chromatograph/mass spectrometry (GS/MS) in accordance with EPA Method TO-14.

RESULTS OF LABORATORY ANALYSES

The results from the TO-14 analysis of the sample taken on January 12, 2001 indicated that nine (8) compounds were present in concentrations above detection limits. Following are a list of these compounds and the concentrations indicated by the analysis:

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Compound	Concentration (ppmv)
Dichlorodifluoromethane (Freon 12)	0.058
1,1-Dichloroethylene	0.042
Methylene Chloride	0.0052
Perchloroethylene (PCE)	1.2
cis-1,2-Dichloroethylene	0.0067
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.036
1,1,1-Trichloroethane	0.011
Trichloroethylene (TCE)	0.84

The results indicated concentration of TCE and PCE have continued to increase over the last two quarters (since July 12, 2000). These concentrations are the highest since those determined from samples taken on September 17, 1997 during Phase I. However, as in the previous quarter, the exhaust flow rate is still significantly lower than those observed during previous operations at 1,500 cubic feet per minute. It still appears that these differences continue to be a result from a change in the configuration of the well network valve settings.

Despite the increases in TCE and PCE concentrations which resulted in an overall VOC emission rate of 1.847 lb/day, the emissions were still well below the Conditional Use Permit (CUP) limit of 9.8 pounds per day. This result along, with the previous calculated total VOC emissions for the unit, were plotted on Figure 1. Vinyl Chloride was not detected in the sample taken. Therefore, its CUP limit of 0.14 pounds per day was not exceeded.

HEALTH RISK ASSESSMENT

In accordance with the CUP, the stack concentrations of each constituent and the exhaust flow rates were used to calculate the excess cancer risk resulting from operation of the VES. The first risk calculation was to determine the risk if the unit was operated for a lifetime period of 70 years, evaluating the risk to both workers and local residents for those chemicals specified in SCAQMD Rule 1401, as adopted at the time the unit was permitted. The second risk calculation was to determine the risk to both workers and local residents for the life of the project (the 8.5 year operating period), for all detected chemicals for which carcinogenic risk factors are available.

The resulting cancer risk calculations for both conditions indicated an acceptable Maximum Individual Cancer Risk (MICR) of less than one in one million. The results

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from these calculations, along with the MICR results from previous calculations for the unit, are presented on Figures 2 and 3, for 70 year and 8.5 year calculations respectively.

CONCLUSIONS

Based on the results of the information gathered and samples taken on January 12, 2001, the following conclusions can be made:

VOC emissions from the VES are well below the CUP limit of 9.8 pounds per day.

Since vinyl chloride was not detected, its CUP limit of 0.14 pounds per day was not exceeded.

Excess cancer risks (MICR) were less than one in one million for workers and local residents, using both 70 year lifetime and 8.5 year operating period risk calculations.

If you have any questions or require additional information regarding this status report, please contact me at (714) 431-4142 or Gustavo Valdivia at (714) 431-4113.

Sincerely,

Kevin Cosgrove
Senior Engineer
Environmental Services

Reviewed by:

Gustavo Valdivia, P.E. No. 57702
Project Manager
Environmental Services

Attachments: Figure 1 - Daily VOC Emissions
Figure 2 - Human Health Risk (70 Year Lifetime)
Figure 3 - Human Health Risk (8.5 Year Operating Period)
Laboratory Reports

cc: Ms. Stacey Ebner, South Coast Air Quality Management District

FIGURE 1 - DAILY VOC EMISSIONS
LOCKHEED B-1 VES
Independent Monitoring Data

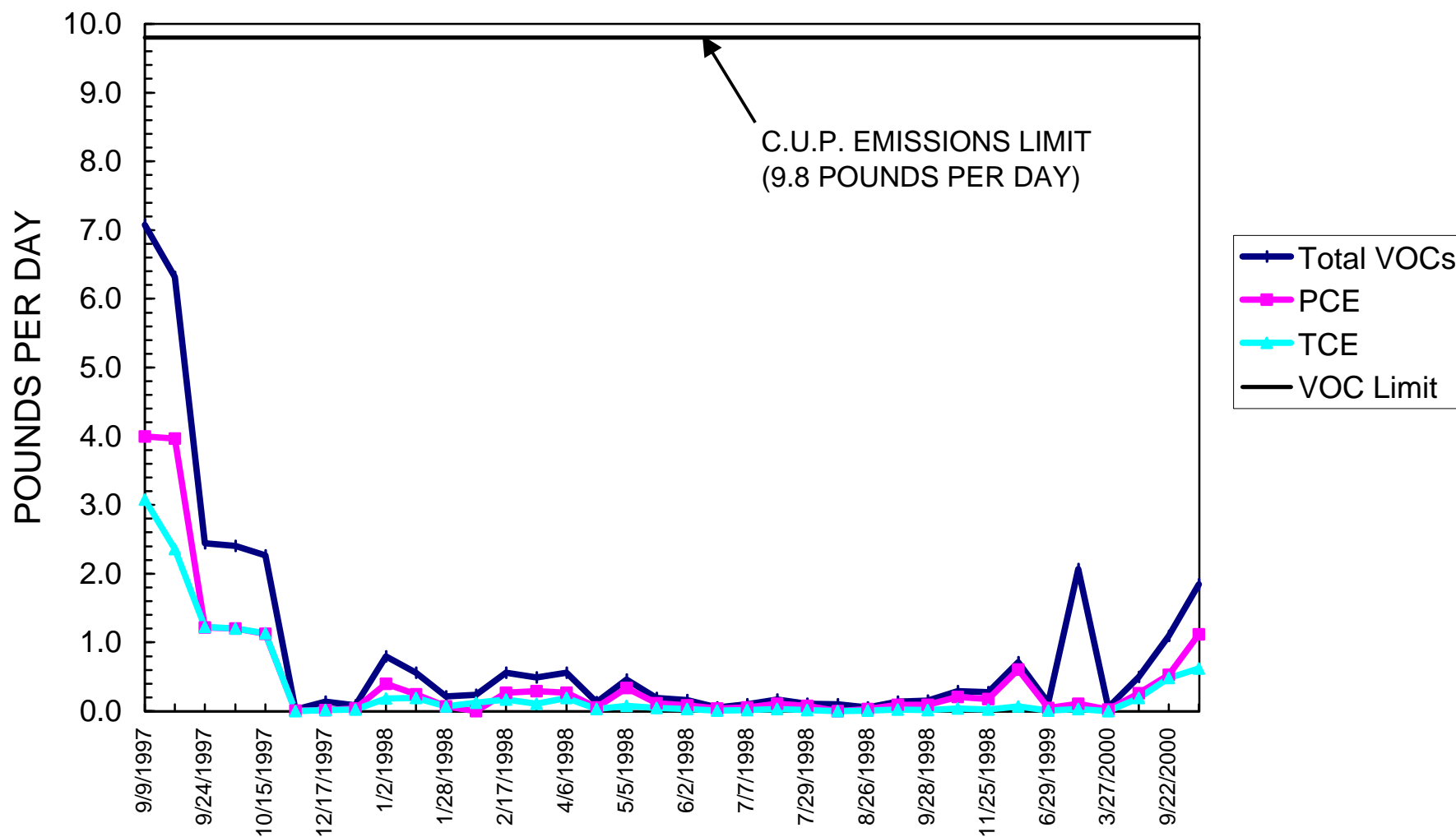
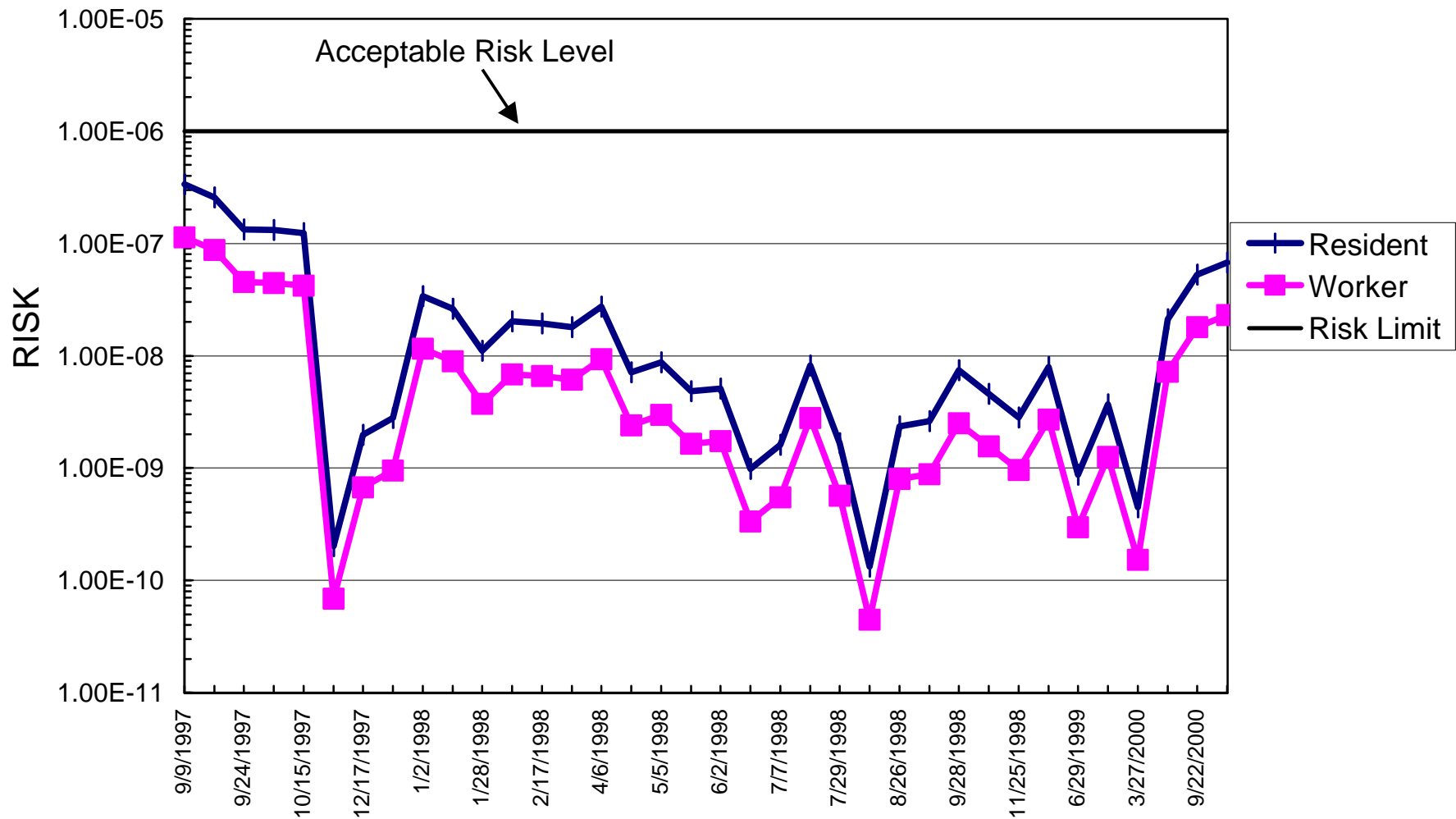
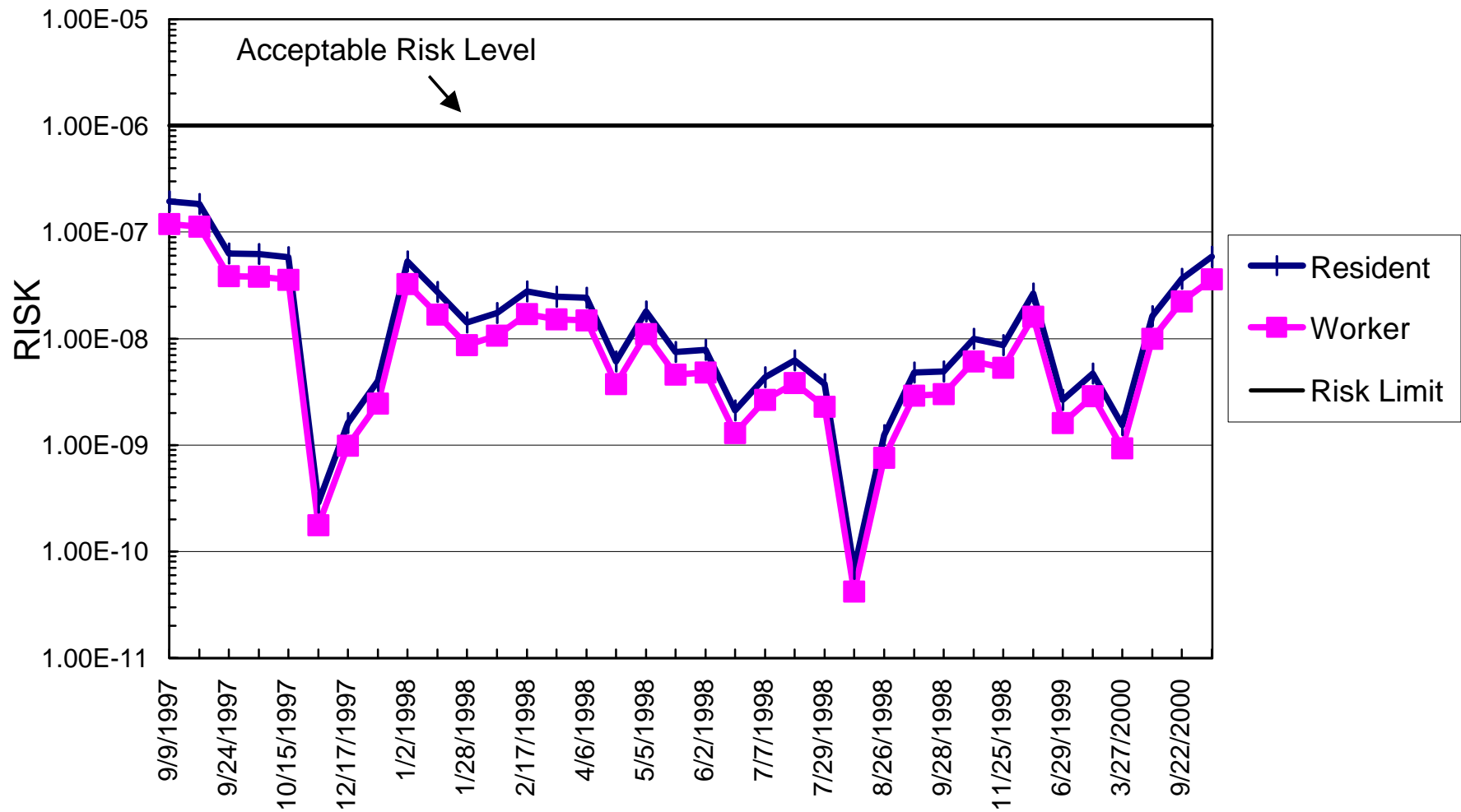


FIGURE 2 - HUMAN HEALTH RISK
LOCKHEED B-1 VES
SCAQMD RULE 1401 CHEMICALS
HYPOTHETICAL 70 YEAR LIFETIME



**FIGURE 3 - HUMAN HEALTH RISK
LOCKHEED B-1 VES
DURING 8.5 YEAR OPERATING PERIOD**





AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

WORK ORDER #: 0101218

Work Order Summary

RECEIVED

JAN 31 2001

BY: _____

CLIENT: Mr. Bill Gendron
Clayton Group Services
3611 S Harbor Boulevard #260
Santa Ana, CA 92704

BILL TO: Mr. Bill Gendron
Clayton Group Services
3611 S Harbor Boulevard #260
Santa Ana, CA 92704

PHONE: 714-431-4100
FAX: 714-825-0685
DATE RECEIVED: 1/15/01
DATE COMPLETED: 1/26/01

P.O. # NR
PROJECT # 8098191 City of Burbank

FRACTION #

NAME

TEST

RECEIPT

VAC./PRES.

01A
02A

B-1-VES-1120
Lab Blank

TO-14
TO-14

1.5 "Hg
NA

CERTIFIED BY:


Laboratory Director

DATE:

1-26-01

Certification numbers: CA ELAP - 1149, NY ELAP - 11291, UT ELAP - E-217, AZ ELAP - AZ0567

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE

TO-14

Clayton Environmental

Workorder# 0101218

One 6 Liter Summa Canister sample was received on January 15, 2001. The laboratory performed analysis via EPA Method TO-14 using GC/MS in the full scan mode. The method involves concentrating up to 0.5 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis. See the data sheets for the reporting limits for each compound.

During the five point calibration, two low-level standards are used. The low-level standard for TO-14 compounds is spiked at 0.5 ppbv and represents the reporting limit for these compounds. The low-level standard for the non-TO-14 compounds is spiked at 2.0 ppbv and represents the reporting limit for these compounds. The TO-14 compounds are present in both standards but are excluded from reporting in the 2.0 ppbv standard since a lower level is already included in the curve.

Method modifications taken to run these samples include:

<i>Requirement</i>	<i>TO-14</i>	<i>ATL Modifications</i>
Internal standard retention times.	Not specified.	Within 0.50 minutes of most recent daily CCV internal standards
Internal standard recoveries.	Not specified.	Within 40% of the daily CCV internal standard area for blanks and samples.
Internal standard retention times.	Not specified.	Within 0.50 minutes of most recent daily CCV internal standards
Internal calibration criteria.	Not specified.	RSD of 30% or less for standard compounds, 40% or less for non-standard and polar compounds
Continuing calibration verification criteria	Not specified.	70 - 130% for at least 90% of standard compounds, 60 - 140% for at least 80% of non-standard and polar compounds
Response factor for quantitation.	Average response factor (ICAL).	Average response factor (ICAL).

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit(background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.
N - The identification is based on presumptive evidence.

AIR TOXICS LTD.

SAMPLE NAME: B-1-VES-1120

ID#: 0101218-01A

EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	g011716	Date of Collection:	1/12/01
Dil. Factor:	9.40	Date of Analysis:	1/17/01

Compound	Det. Limit (ppbv)	Det. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Freon 12	4.7	24	58	290
Freon 114	4.7	33	Not Detected	Not Detected
Chloromethane	4.7	9.9	Not Detected	Not Detected
Vinyl Chloride	4.7	12	Not Detected	Not Detected
Bromomethane	4.7	18	Not Detected	Not Detected
Chloroethane	4.7	13	Not Detected	Not Detected
Freon 11	4.7	27	Not Detected	Not Detected
1,1-Dichloroethene	4.7	19	42	170
Freon 113	4.7	37	36	280
Methylene Chloride	4.7	16	5.2	18
1,1-Dichloroethane	4.7	19	Not Detected	Not Detected
cis-1,2-Dichloroethene	4.7	19	6.7	27
Chloroform	4.7	23	Not Detected	Not Detected
1,1,1-Trichloroethane	4.7	26	11	62
Carbon Tetrachloride	4.7	30	Not Detected	Not Detected
Benzene	4.7	15	Not Detected	Not Detected
1,2-Dichloroethane	4.7	19	Not Detected	Not Detected
Trichloroethene	4.7	26	840	4600
1,2-Dichloropropane	4.7	22	Not Detected	Not Detected
cis-1,3-Dichloropropene	4.7	22	Not Detected	Not Detected
Toluene	4.7	18	Not Detected	Not Detected
trans-1,3-Dichloropropene	4.7	22	Not Detected	Not Detected
1,1,2-Trichloroethane	4.7	26	Not Detected	Not Detected
Tetrachloroethene	4.7	32	1200	8400
Ethylene Dibromide	4.7	37	Not Detected	Not Detected
Chlorobenzene	4.7	22	Not Detected	Not Detected
Ethyl Benzene	4.7	21	Not Detected	Not Detected
m,p-Xylene	4.7	21	Not Detected	Not Detected
o-Xylene	4.7	21	Not Detected	Not Detected
Styrene	4.7	20	Not Detected	Not Detected
1,1,2,2-Tetrachloroethane	4.7	33	Not Detected	Not Detected
1,3,5-Trimethylbenzene	4.7	23	Not Detected	Not Detected
1,2,4-Trimethylbenzene	4.7	23	Not Detected	Not Detected
1,3-Dichlorobenzene	4.7	29	Not Detected	Not Detected
1,4-Dichlorobenzene	4.7	29	Not Detected	Not Detected
Chlorotoluene	4.7	25	Not Detected	Not Detected
1,2-Dichlorobenzene	4.7	29	Not Detected	Not Detected
1,2,4-Trichlorobenzene	4.7	35	Not Detected	Not Detected
Hexachlorobutadiene	4.7	51	Not Detected	Not Detected
Propylene	19	33	Not Detected	Not Detected
1,3-Butadiene	19	42	Not Detected	Not Detected
Acetone	19	45	Not Detected	Not Detected

AIR TOXICS LTD.

SAMPLE NAME: B-1-VES-1120

ID#: 0101218-01A

EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	g011716	Date of Collection: 1/12/01
Dil. Factor:	9.40	Date of Analysis: 1/17/01

Compound	Det. Limit (ppbv)	Det. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Carbon Disulfide	19	60	Not Detected	Not Detected
2-Propanol	19	47	Not Detected	Not Detected
trans-1,2-Dichloroethene	19	76	Not Detected	Not Detected
Vinyl Acetate	19	67	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	19	56	Not Detected	Not Detected
Hexane	19	67	Not Detected	Not Detected
Tetrahydrofuran	19	56	Not Detected	Not Detected
Cyclohexane	19	66	Not Detected	Not Detected
1,4-Dioxane	19	69	Not Detected	Not Detected
Bromodichloromethane	19	130	Not Detected	Not Detected
4-Methyl-2-pentanone	19	78	Not Detected	Not Detected
2-Hexanone	19	78	Not Detected	Not Detected
Dibromochloromethane	19	160	Not Detected	Not Detected
Bromoform	19	200	Not Detected	Not Detected
4-Ethyltoluene	19	94	Not Detected	Not Detected
Ethanol	19	36	Not Detected	Not Detected
Methyl tert-Butyl Ether	19	69	Not Detected	Not Detected
Heptane	19	78	Not Detected	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	121	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	92	70-130

AIR TOXICS LTD.

SAMPLE NAME: Lab Blank

ID#: 0101218-02A

EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	g011706	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 1/17/01

Compound	Det. Limit (ppbv)	Det. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Freon 12	0.50	2.5	Not Detected	Not Detected
Freon 114	0.50	3.6	Not Detected	Not Detected
Chloromethane	0.50	1.0	Not Detected	Not Detected
Vinyl Chloride	0.50	1.3	Not Detected	Not Detected
Bromomethane	0.50	2.0	Not Detected	Not Detected
Chloroethane	0.50	1.3	Not Detected	Not Detected
Freon 11	0.50	2.8	Not Detected	Not Detected
1,1-Dichloroethene	0.50	2.0	Not Detected	Not Detected
Freon 113	0.50	3.9	Not Detected	Not Detected
Methylene Chloride	0.50	1.8	Not Detected	Not Detected
1,1-Dichloroethane	0.50	2.0	Not Detected	Not Detected
cis-1,2-Dichloroethene	0.50	2.0	Not Detected	Not Detected
Chloroform	0.50	2.5	Not Detected	Not Detected
1,1,1-Trichloroethane	0.50	2.8	Not Detected	Not Detected
Carbon Tetrachloride	0.50	3.2	Not Detected	Not Detected
Benzene	0.50	1.6	Not Detected	Not Detected
1,2-Dichloroethane	0.50	2.0	Not Detected	Not Detected
Trichloroethene	0.50	2.7	Not Detected	Not Detected
1,2-Dichloropropane	0.50	2.3	Not Detected	Not Detected
cis-1,3-Dichloropropene	0.50	2.3	Not Detected	Not Detected
Toluene	0.50	1.9	Not Detected	Not Detected
trans-1,3-Dichloropropene	0.50	2.3	Not Detected	Not Detected
1,1,2-Trichloroethane	0.50	2.8	Not Detected	Not Detected
Tetrachloroethene	0.50	3.4	Not Detected	Not Detected
Ethylene Dibromide	0.50	3.9	Not Detected	Not Detected
Chlorobenzene	0.50	2.3	Not Detected	Not Detected
Ethyl Benzene	0.50	2.2	Not Detected	Not Detected
m,p-Xylene	0.50	2.2	Not Detected	Not Detected
o-Xylene	0.50	2.2	Not Detected	Not Detected
Styrene	0.50	2.2	Not Detected	Not Detected
1,1,2,2-Tetrachloroethane	0.50	3.5	Not Detected	Not Detected
1,3,5-Trimethylbenzene	0.50	2.5	Not Detected	Not Detected
1,2,4-Trimethylbenzene	0.50	2.5	Not Detected	Not Detected
1,3-Dichlorobenzene	0.50	3.0	Not Detected	Not Detected
1,4-Dichlorobenzene	0.50	3.0	Not Detected	Not Detected
Chlorotoluene	0.50	2.6	Not Detected	Not Detected
1,2-Dichlorobenzene	0.50	3.0	Not Detected	Not Detected
1,2,4-Trichlorobenzene	0.50	3.8	Not Detected	Not Detected
Hexachlorobutadiene	0.50	5.4	Not Detected	Not Detected
Propylene	2.0	3.5	Not Detected	Not Detected
1,3-Butadiene	2.0	4.5	Not Detected	Not Detected
Acetone	2.0	4.8	Not Detected	Not Detected

AIR TOXICS LTD.

SAMPLE NAME: Lab Blank

ID#: 0101218-02A

EPA METHOD TO-14 GC/MS FULL SCAN

File Name:	g011706	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 1/17/01

Compound	Det. Limit (ppbv)	Det. Limit (uG/m3)	Amount (ppbv)	Amount (uG/m3)
Carbon Disulfide	2.0	6.3	Not Detected	Not Detected
2-Propanol	2.0	5.0	Not Detected	Not Detected
trans-1,2-Dichloroethene	2.0	8.0	Not Detected	Not Detected
Vinyl Acetate	2.0	7.2	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	6.0	Not Detected	Not Detected
Hexane	2.0	7.2	Not Detected	Not Detected
Tetrahydrofuran	2.0	6.0	Not Detected	Not Detected
Cyclohexane	2.0	7.0	Not Detected	Not Detected
1,4-Dioxane	2.0	7.3	Not Detected	Not Detected
Bromodichloromethane	2.0	14	Not Detected	Not Detected
4-Methyl-2-pentanone	2.0	8.3	Not Detected	Not Detected
2-Hexanone	2.0	8.3	Not Detected	Not Detected
Dibromochloromethane	2.0	17	Not Detected	Not Detected
Bromoform	2.0	21	Not Detected	Not Detected
4-Ethyltoluene	2.0	10	Not Detected	Not Detected
Ethanol	2.0	3.8	Not Detected	Not Detected
Methyl tert-Butyl Ether	2.0	7.3	Not Detected	Not Detected
Heptane	2.0	8.3	Not Detected	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	107	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	88	70-130

A DIVISION OF CLAYTON GROUP SERVICES, INC.
3611 South Harbor Boulevard, Suite 260
Santa Ana, CA 92704
Tel (714) 431-4100
Fax (714) 825-0685

CHAIN OF CUSTODY RECORD

Turn Around Time

Rush Authorized? YES ☐ NO ☒

Results Delivery: Phone ☐ Fax ☒

Hardcopy ☒ Electronic ☐

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PROJECT NUMBER: 80 95191	PROJECT NAME: Civil of Robert
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Collected by: (Print): <u>Bill Hendon</u>	Collector's Signature: <u>[Signature]</u>
Relinquished by: <u>[Signature]</u>	Date/Time: <u>11/20/1400</u>
Relinquished by:	Date/Time:
Method of Shipment:	Received by: <u>Casha Samp ATZ</u>
Sample Condition Upon Receipt:	Date/Time: <u>11/15/01 0905</u>
<input checked="" type="checkbox"/> Acceptable	Received at Lab by:
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